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INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)			Applicant(s) Fareed et al.		
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			September 10, 2003	Unknown	
*EXAMINER INITIAL		OTHER DOCUMENTS (Including Author, Title			
	'	"Ferroelectric Semiconductors," V. M. Fridkin, Russia (1976), p. 90 (pp. 64-65 in English version).			
O.F., JO	^			1	
NW D	مناً_				
2/30	194	"High Pinch-off Voltage AlGaN-GaN Heterostructure Field Effect Transistor," M. S. Shur et al., Proceedings of ISDRS-97, Charlottesville, VA, December 1997, pp. 377-380.			
MI	<b>š</b> /	Charlottesvine, v.A. December 2001, pp. 011 000.		,	
. Was	SEE			,	
CALENTO TO	<u></u>	"Optoelectronic GaN-Based Field Effect Transistor	rs," M. S. Shur et al., SPIE Vol. 2397,	рр. 294-303.	
712	i				
"H	i				
<del></del>	 	"Current/Voltage Characteristic Collapse in AlGaN Drain Bias," M. A. Khan et al., Electronic Letters, V	V/GaN Heterostructure Insulated Gate	e Field Effect Transistors at High	
na	ا ر	Drain Bias," M.A. Khan et al., Electronic Letters,	Vol. 30, No. 25, December 8, 1994, pp.	. 2175-2176.	
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## Docket Number (Optional) Application Number **SETI-0006** INFORMATION DISCLOSURE CITATION Applicant(s) Fareed et al. (Use several sheets if necessary) Filing Date Group Art Unit **U.S. PATENT DOCUMENTS** EXAMINER REF DOCUMENT NUMBER DATE FILING DATE NAME CLASS SUBCLASS INITIAL IF APPROPRIATE US006359292B1 03-2002 Sugawara et al. US006316793B1 11-2001 Sheppard et al. US005981977A 11-1999 Furukawa et al. US005851905A 12-1998 McIntosh et al. FOREIGN PATENT DOCUMENTS REF DOCUMENT NUMBER DATE Translation COUNTRY CLASS SUBCLASS YES OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.) "High-Power Microwave GaN/AlGaN HEMT's on Semi-Insulating Silicon Carbide Substrates," S. T. Sheppard et al., IEEE Electron Device Letters, Vol. 20, No. 4, April 1999, pp. 161-163. "High Performance Microwave Power GaN/AlGaN MODFETs Grown By RF-Assisted MBE," N.X. Nguyen et al., Electronics Letters, Vol. 36, No. 5, 2nd March 2000, pp. 468-469.

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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EXAMINER

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*EXAMINER		OTHER ROCHMENTS (Including Author Tit	1 Day David Dance Fin )		
INITIAL		OTHER DOCUMENTS (Including Author, Titl		<del></del>	
	-	"High Electron Mobility Transistor Based on a Gal Letters, Vol. 63, No. 9, 30 August 1993, pp. 1214-12	N-AlxGal-xN Heterojunction," M. A. 215.	sif Khan et al., Applied Physics	
1/2	l	3	•••		
190	l				
1	<u> </u>	"AlGaN/GaN Metal Oxide Semiconductor Heterostructure Field Effect Transistor," M. Asif Khan et al., IEEE Electron			
	l	Device Letters, Vol. 21, No. 2, February 2000, pp. 6.	3-65.		
	İ		>		
	<del></del>	"AlGaN/GaN Metal-Oxide-Semiconductor Heteros	Field Effect Transistors on S	Collegender ! M Acif Khan et al	
	1	Applied Physics Letters, Vol. 77, No. 9, 28 August 2	tructure rieto-effect frausistors of 5 2000, pp.1339-1341.	ilC Sudstrates, 191. Asii kuan ee aa,	
	l		1		
	i		•		
	İ	"Si3N4/AlGaN/GaN - Metal-Insulator-Semiconduct Physics Letters, Vol. 79, No.17, 22 October 2001, pp	tor Heterostructure Field-Effect Tran	sistors," X. Hu et al., Applied	
	Ι.	Physics Letters, voi. 17, 130.11, 22 October 2001, Pp	). 2834-2034.		
	l		<i>t</i>		
		"Insulating Gate III-N Heterostructure Field-Effect	t Transistors for High-Power Microw	vave and Switching Applications," M.	
	١.	Asif Khan et al., IEEE Transactions On Microwav	ve Theory and Techniques, Vol. 51, No	o. 2, February 2003, pp. 624-633.	
	İ		× 1		
	L		1/		
	,,.	"Low Frequency Noise in GaN Metal Semiconductor Rumyantsev et al., Journal of Applied Physics, Vol.	or and Metal Oxide Semiconductor Fig. No. 1, 1 July 2001, pp. 310-314.	eld Effect Transistors," S. L.	
	$F^{\prime\prime}$	The standard of the standard o	70, 110, 2, 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
	i		<i>*</i>		
	·	"Induced Strain Mechanism of Current Collapse in	AlGaN/GaN Heterostructure Field-F	ffect Transistors," G. Simin et al.,	
	1 '	American Institute of Physics, Applied Physics Lett	ers, Vol. 79, No. 16, 15 October 2001,	pp. 2651-2653.	
	i		1/		
		"Elastic Strain Relaxation and Piezoeffect in GaN-A	AIN Can AlCan and Can-InGan St		
	1	Journal of Applied Physics, Vol. 81, No. 9, 1 May 19	997, pp. 6332-6338.	periattices, A.D. Dyniovani c. aii,	
	1			· .	
			harra <u></u> a <u></u>		
		"Two Dimensional Electron Gas Enhancement in A al., Proceedings of 1999 International Device Resea	JGaN/GaN/InGaN/GaN Quantum We	ell Structures," A. D. Bykhovski et	
		al., Floctedings of 1777 International Device Acces	arca Symposium (15DKS-99), 15BN 1-6	880940-00-9, pp. 301-310 (1777).	
1 1	ĺ	1	,		
		"Novel AlN/GaN Insulated Gate Heterostructure Fi	ield Effect Transistor with Modulatio	n Doning and One-Dimensional	
1 1	i.	Simulation of Charge Control," Syunji Imanaga et a 5843-5858.	al., Journal of Applied Physics, Vol. 8	32, No. 11, 1 December 1997, pp.	
} }		3045-3030.	1		
		TO STATE ALCONOMICONIAN	h. Di-		
1 1		"Enhanced Electron Mobility in AlGaN/InGaN/AlGal., Japanese Journal of Applied Physics, Vol. 38, P.	Jan Double-Heterostructures by Piezo Part 2. No. 7B, 15 July 1999, pp. L799	pelectric Effect," Nariniko miaeda et -L801.	
	$I^{-1}$	1			
.]/ ]	i.				
- V		"AlGaN/InGaN/GaN Double Heterostructure Field	-Effect Transistor," Grigory Simin et	al., The Japan Society of Applied	
Na	"AlGaN/InGaN/GaN Double Heterostructure Field-Effect Transistor," Grigory Simin et al., The Japan Society of Applied Physics, Japanese Journal of Applied Physics, Vol. 40, Part 2, No. 11A, 1 November 2001, pp. L1142-L1144.				
14/	. (		J		
EXAMINER		<u> </u>	DATE CONSIDERED		
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Kenn Quinto 6/13/04					

			Docket Number (Optional) SETI-0006	Application Number		
INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)			Applicant(s)			
			Fareed et al.	Group Art Unit		
			Thing Date	Group / M. Call		
*EXAMENER INITIAL	_	OTHER DOCUMENTS (Including Author, Title	le, Date, Pertinent Pages, Etc.)			
1st	"Low Frequency Noise in AlGaN/InGaN/GaN Double Heterostructure Field Effect Transistors," N. Pala et al., Solid-State Electronics 47 (2003), pp. 1099-1104.					
		"Low-Frequency Noise in GaN-Based Field Effect Electronic Devices, Chapter 4, 2002, pp. 49-65.	Fransistors," M. E. Levinshtein et al.	, Noise and Fluctuations in Control in		
	) <sub>1</sub>	"Energy Band/Lattice Mismatch Engineering in Qu Sol. (a) 176, 227 (1999), pp. 227-230.	uaternary AllnGaN/GaN Heterostruc	ture," M. Asif Khan et al., Phys. Stat,		
	. '.	"Pulsed Atomic Layer Epitaxy of Quaternary Allnowing August 2001, pp. 925-927.	GaN Layers," J. Zhang et al., Applie	d Physics Letters, Vol. 79, No. 7, 13		
		"Piezoelectric Doping and Elastic Strain Relaxation in AlGaN-GaN Heterostructure Field Effect Transistors," A. D. Bykhovski et al., Applied Physics Letters, Vol. 73, No. 24, 14 December 1998, pp. 3577-3579.				
	,	"Piezoelectric Doping in AlInGaN/GaN Heterostru November 1999, pp. 2806-2808.	ctures," M. Asif Khan et al., Applied	Physics Letters, Vol. 75, No. 18, 1		
	," )	"III-Nitride, SiC and Diamond Materials for Electr Symposium Proceedings Vol. 423, 1996, pp. 75-79.	onic Devices," D. Kurt Gaskill et al.,	Materials Research Society		
		"Pyroelectric and Piezoelectric Properties of GaN-Res. 4S1, G1.6 (1999) pp. 1-12.	Based Materials," M. S. Shur et al., N	ARS Internet J. Nitride Semicond.		
		"Electron Transport in Wurtzite Indium Nitride," (pp. 826-829.				
	Λ.	"Piezoeffect and Gate Current in AlGaN/GaN High Vol. 71, No. 25, 22 December 1997, pp. 3673-3675.				
	<u></u>	"Two-Dimensional Electron-Gas Density in AlxGa1-xN/GaN Heterostructure Field-Effect Transistors," N. Maeda et al., Applied Physics Letters, Vol. 73, No. 13, 28 September 1998, pp. 1856-1858.				
"Piezoelectric Charge Densities in AlGaN/GaN HFETs," P.M. Asbeck et al., Electronics Letters, Vol. 33, No. 14, 3 July 1997, pp. 1230-1231.						
EXAMINER	k	Euch Quinto	date considered $Q/13$	104		

			Docket Number (Optional) SETI-0006	Application Number
INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)			Applicant(s)	
			Fareed et al. Filing Date	Group Art Unit
*EXAMINER INITIAL		OTHER DOCUMENTS (Including Author, Title		
		"Spontaneous Polarization and Piezoelectric Constants of III-V Nitrides," Bernardini et al., Physical Review B, Vol. 56, No. 16, 15 October 1997-II, pp. R10024-R10027.		
7/2	4)	10, 10 Getteet 1777 11, pp. 11012		
		"GaAs Devices and Circuits," M. S. Shur, Microde Corporation, New York (1987) p. 410.	vices Physics and Fabrication 1	Fechnologies, Plenum Publishing
		"The Influence of the Strain-Induced Electric Field	on the Charge Distribution in	GaN-AIN-GaN Structure." Bykhovski et al
	, .	"The Influence of the Strain-Induced Electric Field on the Charge Distribution in GaN-AIN-GaN Structure," Bykhovski et al., Journal of Applied Physics, Vol. 74, No. 11, 1 December 1993, pp. 6734-6739.		
	71	7		
		"Pyroelectricity in Gallium Nitride Thin Films," By	khovski et al., Applied Physics	Letters, Vol. 69, No. 21, 18 November 1996,
		pp. 3254-3256.		
		"Lattice and Energy Band Engineering in AlInGaN 76, No. 9, 28 February 2000, pp. 1161-1163.	/GaN Heterostructures," M. A	sif Khan et al., Applied Physics Letters, Vol.
	//			·
<b>——</b>		"Electron Mobility in Modulation-Doped AlGaN-G	ah Hatanagtmatuma II D. Cash	o at al. Ameliad Dhysics Vatters Val. 74
No	<b>5</b> .	No. 2, 11 January 1999, pp. 287-289.	an neterostructures," K. Gask	as et al., Applied Physics Letters, vol. 74,
PC	ک ۔	,		
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EXAMINER	1 .		DATE CONSIDERED	
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